

The effect of factors related to prior schooling on student persistence in higher education

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One way to generate useful information, for both the schooling sector and higher education institutions, about students who continue their studies after school is to assess students' perceptions of themselves. Once reliable profiles of these students have been established and related to student performance, analyses may assist to predict factors associated with the persistence of first-year students and retention rates in higher education. First-year student perceptions were measured at one South African university, using the Alpha Baseline Questionnaire. Applying Tinto's Student Integration Model, the potential effect of first-year students' perceptions of their academic, general and social competence on their academic persistence potential was then determined. It was found, *inter alia*, that entry-level university students seem to underestimate time requirements of out-of-class work. Students at a lower level of school performance proved to be over-optimistic about their potential to persist and seemed to be over-confident about their academic self-image compared to school leavers who performed at higher academic levels at school. In areas of general and social self-image this pattern continued. The results of the study are important for school counsellors, teachers in both schooling and higher education, and for academic developers in higher education. Findings indicated the need to prepare school leavers to have more realistic expectations of higher education programmes and to support lower level school achievers more effectively for improved retention rates in higher education.

Introduction

Higher education institutions have long operated with the philosophy that only those "fit" for higher education will be successful. Those students who possess the talents and skills cultivated by favourable or advantaged backgrounds will succeed and those who do not, will find something else to do. In an era of mass and increasingly expensive higher education, however, this philosophy does not hold well. Similarly, through-put or completion rates cannot be viewed as sole criteria of quality and hallmarks of high standards. A different view of what constitutes quality in higher education is needed — a view that not only accommodates increased diversity of students, but also asks questions about the processes that contribute to successful delivery in terms of the outcomes required of higher education.

To assess students' educational development, particularly on completion of their undergraduate studies at higher education institutions, relevant data about students have to be collected before they start their higher education experience. This means that researchers should be assessing students' existing knowledge and aptitudes, personality traits, expectations, as well as students' interest and participation in specific activities, both academically and extra-murally, when they register for higher education (Pascarella & Terenzini, 1991; Eimers & Pike, 1997; Pascarella, 2001). Once a reliable profile of each new student, as well as students collectively, has been established, educationists can proceed to offer suggestions as to the planning, organising, manipulating and evaluating of the experience factor. Knowledge about the various kinds of experiences students are exposed to, and the benefit (or lack thereof) derived from them while students participate in higher education, is important if any useful inferences are to be made. There is little sense in the innovation and application of measures to enhance (or "add value to") student development if the end results cannot be compared to the initial situation at the point of entry, as well as to how they were engaged in the learning process (Kuh, 2001; Banta & Kuh, 1998).

Since institutions vary in terms of the students they attract, it is imperative to control student characteristics on arrival, allowing for bias in inputs. Valid and reliable measures are thus needed to determine the value that different higher education institutions add to their entering undergraduate student populations. In South Africa, no comprehensive strategy to assess the dimensions of student development across institutions is in place. In view of the increasing emphasis

on quality and effectiveness in higher education (Council on Higher Education, 2000), as well as generic learning outcomes that are to be promoted by learning programmes (South African Qualifications Authority, 1999), it is of the utmost importance that effective input-, process- and outcomes-assessment strategies should be investigated and piloted. This is needed not only to complement current quality assurance measures that are focusing mainly on output criteria of institutional effectiveness, but more importantly, to emphasise the quality of student development effected.

The transformational view of educational quality is beginning to evolve only slowly in South Africa. Its basic principles are exemplified by the work of Tinto (1975; 1987) who argues that both students' academic and social experiences are critical determinants of educational outcomes. More recently, this orientation has been developed further by Dietsche (1990; 1995; 1998) and O'Banion (1994) who argue that, since the way in which higher education institutions organise themselves is an important determinant of learning, educators should attend to both the non-cognitive and the cognitive characteristics of students.

Higher education institutions in South Africa are increasingly compelled to ask questions such as the following: What does a higher education experience add to student development, apart from furnishing students with a qualification that might or might not meet professional or societal demands? To what extent does a university or technikon experience unlock the untapped potential, the manifold talents, special attributes, and the powers of insight, innovation, negotiation, decision-making and rhetorical skills lying dormant in the new generation of students that constitutes diverse campus populations? Are generic learning outcomes actually being met, guaranteed and verified, and moreover, could the all-round development of students be improved upon, seeing that education at all levels finds itself in a process of transformation? All of the above questions indicate the need for a holistic, developmental approach to the education of students.

In this study, research at one higher education institution that has adapted and implemented the "talent development" or "value added" views of determining higher education quality is described. In particular, it focused on the possible relationship between pre-university schooling experiences and potential first-year academic performance at one institution.

Origin and purpose of the Alpha Baseline Questionnaire (ABQ)

At the University of Stellenbosch, renewed and integrated developmental programmes were initiated in 2002. These programmes were aimed at assisting students with their orientation into university life (the so-called Alpha programme) and help them to round off their studies at the end of their undergraduate career (the Omega programme). The programmes are accompanied by extensive research at various levels. Under the leadership of the University's Academic Support Services and the Committee for the Welcoming of New Students, an introductory questionnaire (the Alpha Baseline Questionnaire or ABQ) was developed to generate student entry data and determine student perceptions of themselves before they start their studies at university. The broad aims of the project are to improve the quality of student learning experiences, to limit student attrition and to assist students with their progression into the job market or further studies at the institution.

As part of the Alpha programme, a study on student development outcomes was initiated by a research team looking into the improvement of the learning-teaching environment as judged by student perceptions. The pilot project has five goals, namely,

- to generate data on individual first-year students that can be used for diagnostic purposes, for advice, and for early interventions upon identification of potential needs;
- to provide a database to determine trends concerning the first-year group;
- to generate institutional data for information management purposes concerning the first-year group of students;
- to generate data concerning student perceptions that can be used for comparison to later stages of their university experience and
- to identify factors relevant to improving the quality of the learning-teaching environment.

Since a research group for each of these goals operates at different levels of the institution, this article reports mainly on the questions and concerns related to the fifth goal stated above. It also needs to be explained that, although the project connected to the fifth goal ("to identify factors relevant to improving the quality of the learning-teaching environment") includes the assessment of student perceptions of cohorts of students at the beginning and end of their first academic year, as well as at the end of their final year of study, only the data related to prior schooling that were generated by the first entry assessment were used for this particular investigation.

Nature and theoretical base of the ABQ

A core group of researchers at the University of Stellenbosch started in 2001 with the development of instrumentation for assessing student perceptions of their own development. Suitable questionnaire items were generated by adapting existing international instrumentation on the basis of possible future comparison to international trends as well as inter-institutional trends on a national level. At the same time relevance to the institutional context had to be prominent and questions had to be of a significant diagnostic value with a view to personal follow-up with individual students.

Five prominent sources were consulted:

- Astin's Input-Environment-Output (IEO) model of student development assessment,
- Kuh's model of student engagement,
- the South African Wellness model,
- the Freshman Integration and Tracking System (FIT) applied in Canada, and
- Tinto's model of student departure.

The result was the Alpha Baseline Questionnaire (ABQ) comprising 174 items that are grouped into 13 sections: biographical; schooling characteristics; time management characteristics; perception of own abilities; influences regarding study decisions; financial concerns; reasons for studying at a particular institution; academic and personal assistance needed; view on the self; involvement/participation in activities;

career goals; views and values, and personal wellness.

In order to clarify the theoretical basis of the ABQ, each of the above models is briefly discussed.

Astin's IEO model

Astin's Input-Environment-Outcomes (IEO) approach (1975; 1991; 1993) to the assessment of student development provides a theoretical framework to organise cause and effect, taking into consideration what happens between the inputs and outcomes of students' higher education experience. Many assessment studies incorrectly focus solely on either inputs or outcomes — measuring throughput or dropout rates, for example — without indicating institutions' educational impact or effectiveness in developing the talents and skills of students.

The fundamental premise underlying the talent development concept (Astin, 1993) is that true educational excellence lies in an institution's ability to affect its students and staff favourably, to enhance their intellectual and scholarly development, and to make a positive difference in their lives. The most "excellent" institutions are, in this view, those that have the greatest impact on (add the most value to) students' knowledge, skills, attitudes and personal development. In terms of quality assessment it is thus imperative to determine the changes or improvements or growth in student bodies over time. In Astin's view of talent development, excellence is determined by the quality and quantity of student learning and development. What has thus been included in the ABQ instrumentation are items adapted from the annual Freshman Survey that is conducted by the Higher Education Research Institute in the School of Education at the University of California, Los Angeles (HERI, 2001).

Kuh's student engagement model

What counts most in terms of desired higher education outcomes is what students do during their higher education experience, not who they are or even what institution they attend. The best single predictor of student learning and personal development is the time and energy students devote to educationally purposeful activities (Banta & Kuh, 1998; Kuh, 2001). The implication is that those institutions that more fully engage their students in the variety of activities that contribute to valued outcomes, can claim to be of higher quality compared with similar types of institutions.

Certain institutional practices are known to lead to high levels of student engagement. Perhaps the best-known set of engagement indicators is the "Seven Principles for Good Practice in Undergraduate Education" (Chickering, Gamson & Barsi, 1989). These principles include student-staff contact, co-operation among students, active learning, prompt feedback, time spent on learning tasks, high expectations and respect for diverse talents and ways of learning. Also important to student learning are institutional environments that are perceived by students as inclusive and affirming, and where expectations for performance are clearly communicated and set at reasonably high levels. All these factors and conditions are positively related to student satisfaction and achievement on a variety of dimensions.

The annual survey of undergraduates at four-year colleges and universities in the USA, the national Survey on Student Engagement, has established itself in more than 500 higher education institutions (University of Indiana, 2001). This survey assesses engagement practices in order to benchmark effective educational practices on five benchmarks, namely the level of academic challenge; active and collaborative learning; student-staff interaction; enriching educational experiences and a supportive campus environment. A number of items from this instrument were adapted for inclusion into the ABQ.

The freshman integration and tracking system

Another model that is considered to be important in the development of the ABQ instrumentation is Dietche's (1990; 1995; 1998; 2001) Freshman Integration and Tracking System (FIT). The FIT system is also theoretically based on the "person-environment fit" model of Tinto (1987; 1993). The system acknowledges the variables and path-

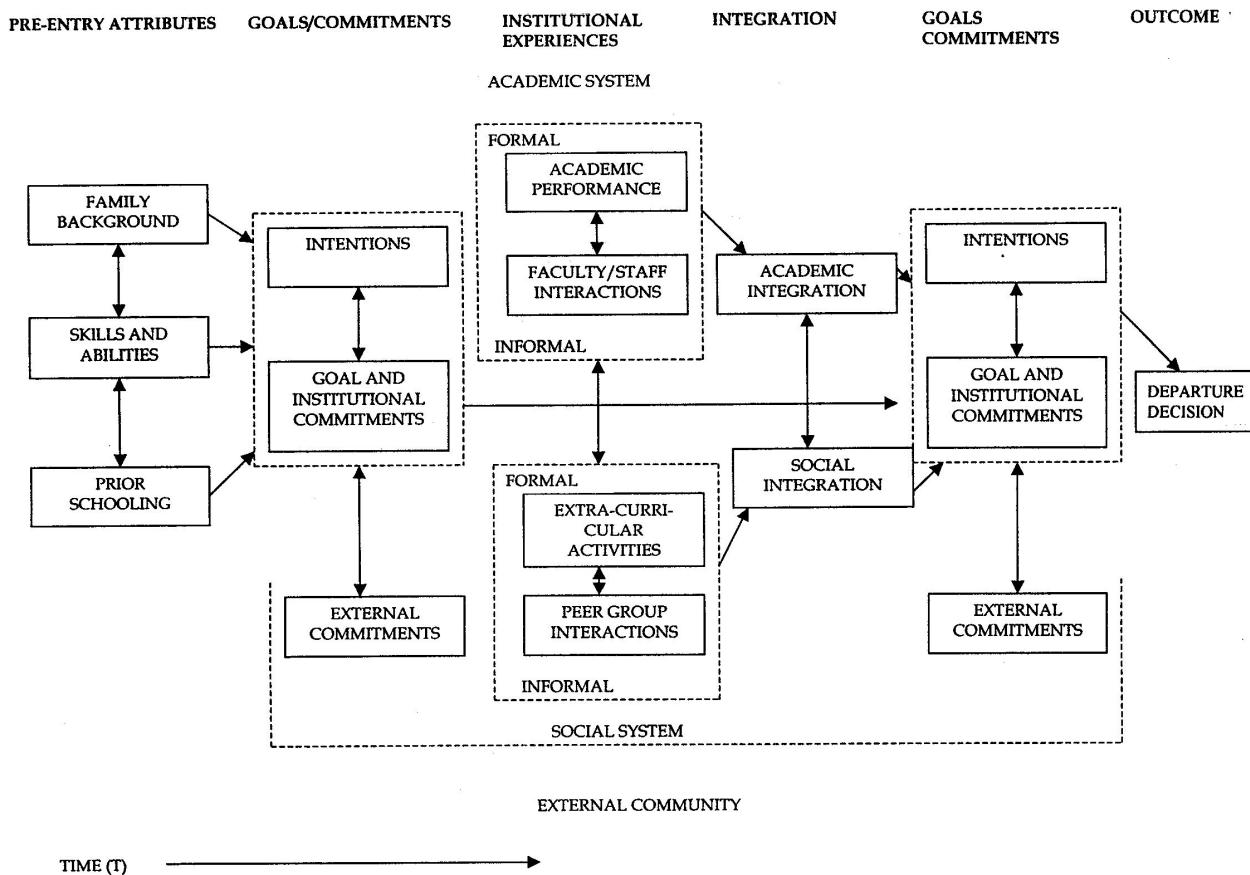


Figure 1 A longitudinal model of institutional departure (Tinto, 1993)

ways associated with student departure. It argues that the process of student withdrawal could be viewed as longitudinal interactions between the individual and the academic and social systems of an institution. In essence, student retention and academic success (and expected related institutional quality) depend on an early identification of the degree of "fit" or congruence between students and their learning environments. A number of FIT items were consequently adapted to ensure the tracking of individual students as an important diagnostic feature of the ABQ instrumentation.

Tinto's model of student departure

In studies that focus on the influence of prior schooling on student persistence like the study undertaken at the University of Stellenbosch, Tinto's research is of particular interest as a theoretical model. His longitudinal model of student departure (1993) is illustrated in Figure 1.

Although there are other models which point to differences with the Tinto model and might explain cultural differences better (e.g. Nora, 1987), this model of student departure from higher education institutions (Tinto, 1987; 1993) does not only explain factors determining student decisions to leave institutions before completing their studies, but also provides useful insights into factors contributing to learning success. The model is primarily sociological in nature and focuses on intra-institutional environments, students' voluntary withdrawal from studies and the formal and informal environments as factors playing a central role in the longitudinal process of student departure.

Following from Figure 1, Tinto (1993) argues that individual departure from institutions can be viewed as arising from a longitudinal process of interactions between an individual student with given attributes, skills, financial resources, prior educational experiences, and dispositions (intentions and commitments) and other members of the academic and social systems of the institution. A student's experience

in those systems, as indicated by his/her academic (intellectual) and social (personal) integration, continually modifies his/her intentions and commitments. Positive experiences (i.e. integrative academic and social experiences) reinforce persistence. Experiences that are positive impact upon heightened intentions and commitments both to the goal of completion of studies and to the institution in which the person finds him-/herself. Negative or malintegrative experiences serve to weaken student intentions and commitments, especially commitment to the institution, and thereby enhance the likelihood of them leaving the institution.

Paramount in the departure decision is students' commitment to their goal of completing their studies and their commitment to the institution. Tinto (1993) found that strong links between students' personal valued goals and the goal of completing their studies, increase commitment, and thus the likelihood of persistence until the qualification is obtained. During their study years students' integration into the academic and social environment of the institution determines the level of their commitment to the institution. The level of their initial commitment is affected by students' entry characteristics. These characteristics include family background characteristics (e.g. socio-economic status, parental educational level), individual attributes (e.g. academic ability, race, and gender) and pre-university schooling experiences (e.g. high school academic achievement, involvement in high school activities). In this study pre-university schooling experiences were of particular importance.

The South African Wellness Model

Student wellness is considered to be more than the absence of illness. Wellness represents the enhancement of the quality of life resulting from a balanced lifestyle that promotes different dimensions of being well.

Wellness is also an active process of becoming aware of and making choices toward a higher level of being well, including a

positive approach to living. Increasing attention has been devoted lately to the development of holistic models to increase student wellness on South African campuses. One such effort is the development of the South African Perceived Wellness Model (Davies, Knoesen & Nock, 2001). This model was instrumental in triggering a number of ideas and items on student wellness — particularly intellectual and social wellness — for inclusion in dimensions of the ABQ instrumentation described in this article.

Method

The Tinto Student Integration Model (1993) presented in Figure 1 was used as a theoretical framework in the study to describe, from a persistence perspective, the first-year student profile at the University of Stellenbosch. The aim was to identify possible factors relating to students' academic success, or conversely, to identify possible factors relating to student decisions to depart from the institution before the completion of their studies.

Using the ABQ as instrumentation, a survey of all of the 3 954 first-year students was done before the commencement of their academic programme in 2002. Student responses to the questionnaire were analysed by applying the constructs in the Tinto model (see Table 1) and in particular pre-entry attributes/characteristics related to prior schooling.

Table 1 Central constructs in Tinto's Student Integration Model (1993)

A. Pre-entry attributes/ characteristics	A.1	Family background
	A.2	Skills and abilities
	A.3	Prior schooling
	A.4	Intentions/aspirations
B. Commitment	B.1	Student goal commitment
	B.2	Student institutional commitment
	B.3	Student external commitment

The first prominent factor analysed in this category was the learner's educational background provided during his/her twelve years at school. Although students' level of academic preparedness is crucial to their success in the higher education environment, the aim of this study was to establish how other factors related to prior schooling might potentially affect student persistence.

In accordance with Tinto's theory of student integration, the identified factors were divided into two main categories, namely, academic and social factors. Because of its importance for learning beyond higher education, a sub-category consisting of three general factors, which are also critical crossfield outcomes (South African Qualifications Authority, 1999), was added. How the above factors relate to one another is illustrated in Figure 2.

For each of the above categories representative items on the ABQ were selected. The selected items are but a small portion of a complete list of factors that should be included in each category. This limitation of the present study is due to the fact that the ABQ was not specifically designed to focus on prior schooling factors only, but rather to obtain a holistic view of new university entrants. All responses to the selected items were expressed in terms of activities during a learner's last year at school.

As indicated in Figure 2 the academic factors that were included for analysis were effort, academic responsibility and academic integration. The level of student effort was indicated by how much time students devoted to their homework during the last year at school, students' perception of their ability to persist and how they perceived the academic workload at school. Academic responsibility was measured by school attendance and by the frequency of handing in homework on time. The two aspects considered regarding academic integration were students' confidence in their ability to persist and most importantly, their academic self-image. The latter was represented by

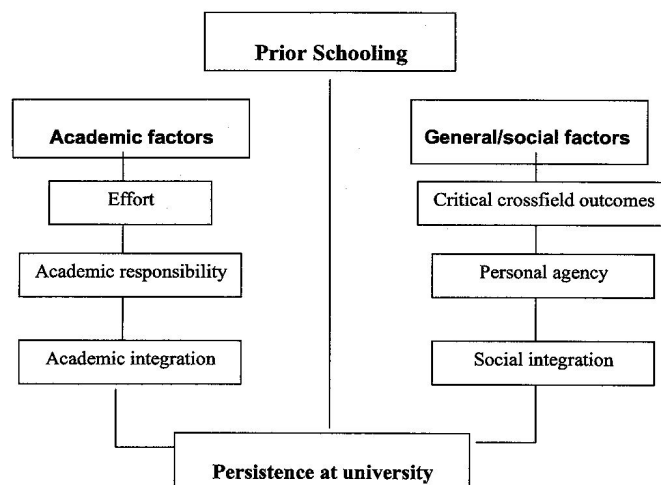


Figure 2 Prior schooling factors affecting university persistence

students' perception of their ability to communicate effectively in writing, as well as of their intellectual self-confidence, their perception of their academic ability, problem solving and mathematical abilities and their creativity. Response options to questions related to students' perception of their ability regarding specific concepts also included, apart from average, above and below average categories, an option to rate themselves as being in the top or bottom 10% of their peer group. The reason for inclusion among the top 10% as a separate response option is related to the recent trend at the institution to consider a learner's academic performance within the top ten class positions at school as an additional possible indicator of academic success in the higher education environment. However, this factor as a co-predictor of academic performance has not yet been tested empirically.

The social factors that were considered were personal agency and social integration. Questions selected to represent personal agency were students' level of self-understanding, their ability to effectively manage their time, as well as their perceived level of self-management ability. Social integration was represented by social self-image and by teacher-student interaction outside the classroom. The responses that would indicate social self-image commented on students' ability to communicate orally, their perception of their own popularity, their ability to understand others and their social self-confidence.

The general factors related to lifelong learning, and which are also considered critical crossfield outcomes, were information literacy, teamwork and problem solving. Information literacy was measured by students' perception of their ability to handle information effectively, their computer skills and experience in using the internet to obtain information. Teamwork was represented by students' confidence to work effectively in a group, their willingness to co-operate with others, whether they tutored other learners at school and how often they studied in a group. Their problem solving ability was deducted from their perception of both their mathematical and creativity level, as well as whether they were able to identify and solve problems. The latter overlaps with topics used to indicate academic self-image.

Students completed the ABQ within the first month of their first academic year. The software used by the University of Stellenbosch for electronic teaching is Web CT. All first-year students had access to the ABQ on Web CT in the computer user areas of all faculties during the first month. The ABQ was available in English and Afrikaans and although it was non-compulsory, students were requested and encouraged to complete the questionnaire.

Results

The 1 868 respondents who completed the ABQ represent 47% of the 3 954 first-year students who registered for the 2002 academic year at the University of Stellenbosch. The results are reported in the fol-

lowing categories: gender, race (white, coloured¹) language (English, Afrikaans) and average Grade 12 examination performance categories (an average A or 80% and above, an average B or 70% – 79%, an average C or 60% – 69% and an average D or 50% – 59%). The results are presented per factor as explained earlier during the discussion of Figure 2.

Academic factors

The data related to academic effort are presented in Table 2.

It is important to note that more than 25% of the students in all categories spent less than six hours per week on study and homework during their final school year and only 8.2% more than 20 hours per week. Regarding students' perception of their ability to persist a larger percentage of D candidates (20.1%) than B (19.4%) or C candidates (19.6%) considered themselves in the top 10% in relation to persons of their own age. The smallest percentage (3.1%) of students who indicated that they were often overwhelmed by activities they had to do were also D candidates.

The responses related to academic responsibility indicated that in all categories the number of students whose homework was always on time ranged from 40% to 58%. B candidates were lowest and Coloured students highest in this range. Relatively few students (0.5% – 2.7%) in all categories stated that they often missed classes. Within this range the lowest percentage was reported by coloured students and the highest by English and C candidates.

Regarding academic integration students' responses related to their academic self-image were mostly positive. For all items related to academic self-image, the percentage of D candidates who responded in the "very confident" category was higher than the percentage of C candidates in this category. The frequency of responses from D candidates was also higher than that of the C candidates for items in which students had to compare themselves with peers and decide whether they considered themselves to be in the top 10% category.

General factors

The first category in this section, which also relates to critical cross-field outcomes, is information literacy. In the computer-related items there is a considerable difference between the responses of male and female students, as well as between those of coloured and white students. More males (40%) than females (13.7%) stated that they had above average computer skills. Of the respondents who indicated that they had no experience of using the internet to find information, 53% were coloured and 25% white. The other indicator of information literacy was students' perception of their ability to collect, analyse, organise and critically evaluate information. Most students were fairly confident that they knew how to do this. Almost half of the A candidates (45%) and between 28% and 36% of all the other candidates responded to this item in the "very confident" category.

The results for the items related to teamwork were as follows: In general students were very confident of their ability to work together in a group, with the highest frequency for D candidates (65.4%), and the lowest for A candidates (45.2%). More than 70% of the respondents in all groups marked the "above average" category regarding their willingness to co-operate with others. More coloured (27.1%) than white students (17.7%) stated that they often tutored others or helped them with their homework. There was little difference between B, C and D candidates' responses on this item, while slightly more A candidates said that they often assisted others. Although the percentages were relatively low, there were more coloured (17.9%) than white students, and more D candidates (13.4%) than A candidates (5.8%) who reported that they often studied together in a group.

Table 2 Academic effort: ability to persist, perception of workload and time on task

Group	Workload often over-whelming	Ability to persist: top 10%	Highest frequency (hours per week)	> 20 hours	< 6 hours
All candidates	7.2	21.3	6 – 20	8.2	27.3
A candidates	7.7	24.2	11 – 20	10.2	22.3
B candidates	8.6	19.4	6 – 20	6.1	29.0
C candidates	4.9	19.6	6 – 10	6.6	32.0
D candidates	3.1	20.1	6 – 10	6.5	39.3
Male	3.9	25.3	6 – 10	4.7	34.3
Female	7.4	18.2	11 – 20	10.9	22.0
English	13.9	20.4	6 – 10	8.4	27.8
Afrikaans	5.4	21.7	11 – 20	8.5	26.5
Coloured	6.4	19.3	11 – 20	10.6	25.0
White	7.4	21.6	6 – 20	7.8	27.5

The last of the general factors was personal agency. More than 97% of the students reported that they are "fairly confident" to "very confident" of their ability to manage themselves effectively and responsibly. Most respondents also stated that they considered themselves to have "above average" self-understanding, with A and D candidates the highest (both 67%) and C candidates the lowest at 53.6%.

Social factors

The items selected to indicate social self-image are students' perception of their ability to communicate effectively, how they rate their understanding of others, how popular they consider themselves to be, and their level of social self-confidence. The highest response in the "very confident" category regarding their ability to communicate effectively, was from D candidates (42.1%), and the lowest from B candidates (29.3%). The majority of the respondents (97%) rated their understanding of others in the "average" or "above average" categories. The remaining items in the social factors group are reported negatively. More coloured students (12.7%) than white students (8.3%) considered themselves to be in the "below average" category regarding popularity. Quite a number of A candidates (12.7%) stated that their social self-confidence is below average, while only 2% of the D candidates were in this response category.

The last item that indicates students' level of social integration was the out-of-class contact between learners and teachers. The majority of students stated that they had less than two hours per week contact with their teachers during their final school year. Of those students who indicated that they had no contact, 11.8% were white and 6.5% were coloured. There was little difference between the number of A, B and C candidates (for all about 11%) and fewer D candidates (6.5%) in this response category.

Discussion

Academic factors

The out-of-class time requirements of any programme during the first year of study demands much more than six hours' academic activities per week and insufficient effort is often a reason for failure. An average university first-year programme consists of at least two class contact sessions per subject and one practical or tutorial per week — each of about 50 minutes' duration. First-year students enrol for a minimum of five subjects, which implies about nine hours' compulsory academic activity per week at first-year level. For each contact session lecturers are entitled to expect double the time used for preparation and self-study at home. This means that students should spend at least 18 hours per week on study and homework. If contact sessions are included with study and homework, and a 30-week, 1 200 notional hours' year is considered, a total of 40 notional hours per week is required (Luckett, 1998). The difference between the time-on-task during their matric year and the time-on-task required during the first year at university,

1 "coloured" refers to a pre-1994 political dispensation in South Africa whereby people and communities were classified on the basis of race. In this case it implies students from a community predominantly consisting of members from "mixed", i.e. "white" and "black" ancestry. Although race classification has been stopped in South Africa, higher education institutions use it to set and determine equal opportunity targets.

as indicated by the majority of respondents, is a matter of concern. This might well be an important reason why students fail or even drop out during the first year.

The Tinto model supports the notion that students' perception of the workload determines the level of their effort. A very small percentage of respondents in this case had problems with the workload at school. They probably adapted the number of hours spent on homework and study to their perception of the demands of the workload. Workload is one of the factors that influence the academic adaptation process during the first year in higher education. The danger with the steep increase in time necessary to cope with the workload at university, is that students are not able to adapt effectively, either because they do not perceive the demands of the task correctly or because they do not know how to manage their time effectively. In the present study fewer D candidates than B or C candidates indicated that they had problems with the workload at school, which might be an indication that D candidates have a wrong perception of the effort needed. If this incorrect judgement of the demands of the academic task persists during their first year, the chances are slim that these candidates will succeed academically.

Learners should have the opportunity at school to assess the level of effort needed for various academic tasks in combination with effective learning strategies for each specific task. Even if they do not complete the full range of tasks but select a reasonable number from a wider range, the exposure to and discussion of the demands of each task will aid the development of learners' ability to assess workload more realistically.

Students' belief in their ability to persist gives an indication of their academic self-image, which is a core factor in their successful academic integration into higher education. The positive response of the majority of students provides a sound base for and indicates an openness to and expectation of positive educational experiences in the higher education environment. The alternative interpretation of the learners' response is that they know from previous experience in difficult learning situations that they are able to persevere and succeed. Such experiences would also build their academic self-image.

General factors

Information literacy plays an important role in both under- and post-graduate studies. The use of computer databases to search for and retrieve information is only part of being information literate. Core skills in the process are the critical assessment of information, both for initial selection and for the decision regarding the quality of the contents, as well as the synthesis of material from various sources. Although most students indicated that they were confident in managing information well, many of them will probably discover that their perceived ability is not reflected in the marks they obtain for assignments. This is possibly due to a wrong perception of the full implication of information literacy and of what is required at higher education level. The large number of coloured students, who had no experience of using the internet, is probably due to a lack of opportunity because of economic factors at home and poor facilities at school, rather than to a lack of interest or an inability to do so. This is not necessarily the case with the large number of female students who indicated that they consider their computer skills to be merely average or below average. All students should realise the importance of developing their ability to make use of electronic media, and should be encouraged to use all available opportunities to develop these skills.

The correspondence between the responses of A and D candidates on items selected as academic and general factors is noteworthy. In some cases this indicates D candidates' lack of insight into what is expected from them, or over-confidence in their own ability. This could be due to their experience in the school environment. Students who attended small, rural schools could have performed well in comparison to their peers. At the time of the survey, they had not yet had the opportunity to test their ability against that of the larger first year group. This is not necessarily a negative situation, provided that

they gain insight into the real demands of the academic tasks that they face during their first year of study. Students' perception of an academic task, their perception of their own ability and their belief that they can succeed at a specific task, determines the effort they will put into the task. It is thus important that students should know how to assess their academic tasks and their own ability in a realistic way, and, that they should have the opportunity to have mastery experiences, which can strengthen their academic self-image.

The biggest concern should be with C candidates, as in this study it was found that these students often rated themselves at the lower end of the scale. This can be considered to be a positive finding, because it indicates that they probably have a more realistic perception of what is expected of them academically and of their own ability. However, these students should not be neglected, because they probably have the potential to succeed, but might get despondent, and unless they have a strong goal or institutional commitment, they might decide to leave.

Social factors

For students to persist in higher education either high academic or high social integration is necessary. Students whose social self-image is low have to depend on their academic ability to become integrated into the higher education environment. The chances that D candidates will find it easy to become academically integrated in the mainstream are thus slim. However, if they should be incorporated in a foundation programme that entails completing their academic first year over two years, before entering the mainstream academic second year, their chances to persist are better.

Conclusion

In this study, the first of its kind to be conducted at a higher education institution in South Africa, university entrants' perceptions of their own standing on academic, general and social factors were assessed using the ABQ. The study focused on how prior schooling factors might impact on persistence in the first year of study in higher education. Although instrumentation is still in a developing phase and no firm recommendations are thus possible at this stage, the study has provided indications of the potential value of instruments such as the ABQ to identify student groupings and individuals with perceived problems or misperceptions of their abilities. It has become clear that the smooth transition of students from school to higher education is still regarded as a challenge to both sectors. What is particularly disturbing is that students with low performance levels at school are more confident of success than students at higher levels of school academic performance. Also of importance is that students with average performance levels at school are more realistic than students with lower performance levels and that they might benefit more from any support that a higher education institution can offer. Follow-up and comparative studies at the University of Stellenbosch and other contexts will be needed to establish more firmly the value of newcomer first-year students' perceptions of themselves.

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